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i2 SUMMIT

TARGET LESION THIN-CAP FIBROATHEROMA DETECTED BY VIRTUAL HISTOLOGY INTRAVASCULAR ULTRASOUND AFFECTS MICROVASCULAR INJURY DURING PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ANGINA PECTORIS

i2 Poster Contributions
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Background: The precursor lesion for plaque rupture is known as thin cap fibroatheroma (TCFA). Several reports suggested that virtual histology(VH)-IVUS lesion assessment could predict microvascular damage during percutaneous coronary intervention(PCI). A novel index for microcirculatory resistance (IMR) has been developed as a reproducible and less hemodynamic dependent index compared to coronary flow reserve (CFR). Although pre-intervention TCFA assessed by VH-IVUS has been shown to predict distal embolization during PCI, its impact on IMR is unknown. There are few data about the relationship of microcirculatory damage between change of IMR and existence of TCFA.The purpose of this study was to investigate the relationship between TCFA detected by VH-IVUS and change of IMR during PCI in patients with angina pectoris (AP).

Methods: Thirty lesions from 28 AP patients were enrolled. VH-IVUS imaging was performed before PCI. TCFA was defined as a presence of necrotic core (>10%) without detectable overlying fibrous cap segment. Using a pressure wire, CFR and IMR were measured before and after PCI. Patients were divided into two groups according to the presence (TCFA group) or absence (non-TCFA group) of TCFA.

Results: CFR and IMR tend to improve after PCI in non-TCFA groups. However, IMR and CFR tend to worsened in TCFA group. ΔIMR was significantly higher in TCFA group than in non-TCFA group (Figure).

Conclusions: Target lesion TCFA may be related to microvascular injury after PCI.